

REMARKS

Claims 1-11 are pending. By this Amendment, claims 1, 5-8, 10 and 11 are amended in order to even more clearly distinguish over the applied references. No new matter is added by the above amendments. For example, the feature that the amplifier sequentially converts electrical charges is disclosed in the original specification at, for example, page 18, lines 3-5. The other claim amendments are clearly supported throughout the specification.

The Office Action objected to the title. The title has been amended. Withdrawal of the objection to the title is requested.

Claims 6 and 7 have been amended to overcome the objection to those claims noted in the Office Action.

Claims 8-11 stand rejected under 35 U.S.C. §102(e) over U.S. Patent No. 6,340,864 to Wacyk. This rejection is respectfully traversed.

Independent claims 8 has been amended to recite that the heat generating component includes at least an amplifier that converts an electrical charge from the photoelectric conversion elements into voltage and amplifies the voltage. Claim 8 also has been amended to recite that the power to the heat generating component is provided from the outside. Applicant respectfully submits that Wacyk does not disclose or suggest either of the above-noted features of claim 8.

In particular, Wacyk does not disclose or suggest an amplifier as a heat generating component that is provided on a single semiconductor substrate along with the claimed photoelectric conversion elements. In addition, power source 37 of Wacyk, which the Office Action analogizes to the claimed heat generating component power control circuit, is provided on the substrate, and provides power to any heat generating components located on the substrate. Thus, the power supplied to the heat generating components by element 37 of Wacyk is not "provided from the outside" as recited in claim 8.

Accordingly, independent claim 8 and its dependent claims 9-11 are patentable over Wacyk. Withdrawal of the rejection based upon Wacyk is earnestly solicited.

Claims 1-7 stand rejected under 35 U.S.C. §103(a) over "Applicant's conceded prior art" in view of U.S. Patent No. 6,552,324 to Kothari et al. This rejection is respectfully traversed.

Kothari et al. relates to a system in which an amplifier (33) is provided for each photodiode 14 such that each photosite cell 15 has its own amplifier 33. See, for example, col. 3, lines 11-14 of Kothari et al. Accordingly, as described at col. 5, lines 22-26 of Kothari et al., "the overall duty cycle of any individual amplifier 33 will be quite short in proportion to the total time of operation of the image sensor array 10." This differs from the image-capturing device of independent claims 1 and 5 (and "Applicant's conceded prior art" of Fig. 5) in which the amplifier sequentially converts each of the electrical charges transferred from the photoelectric conversion elements. In such a system, the amplifier is active for all or most of the operation time of the image sensor array (or for a significant portion of the operation time when, for example, the photoelectric conversion elements are divided into a plurality of groups, and each group has an amplifier (such that a plurality of amplifiers are provided) as disclosed in the specification at page 23, line 21 - page 24, line 7).

Because the claimed (and Fig. 5 prior art) sequential systems are different from the one-to-one system of Kothari et al., Applicant respectfully submits that there is no suggestion in Kothari et al. to modify the Fig. 5 prior art system in the manner proposed in the Office Action.

In addition, and as described in the specification at, for example, page 3, lines 11-24 and page 8, line 25 - page 9, line 5, the arrangement recited in independent claims 1 and 5 seeks to deal with a dark current shading problem, which problem is not recognized by Kothari et al. Accordingly, Applicant respectfully submits that independent claims 1 and 5,

as well as their dependent claims 2-4, 6 and 7, are patentable over "Applicant's conceded prior art" in view of Kothari et al. Withdrawal of the rejection is requested.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number set forth below.

Respectfully submitted,



Mario A. Costantino
Registration No. 33,565

MAC/ccs

Attachment:

Petition for Extension of Time

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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